

## ADDITIONAL RECORDS OF FLEAS (SIPHONAPTERA) FROM UTAH

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Subsequent to the important work of Stark (1959), few publications have given flea collection records from Utah. These include Jellison and Senger (1976) and Kucera and Haas (1992); but most effort in this area has been that of Egoscue (1966, 1976, 1977, 1988, 1989).

Herein is presented information for 10 species of Siphonaptera for Utah. A number of important records were obtained from the flea collection at the Monte L. Bean (MLB) Life Science Museum, Brigham Young University, Provo, UT. Catalog numbers of host specimens deposited in the University of Utah Museum of Natural History (UU) mammal collection and flea specimens in the MLB Museum (BYU) insect collection are given in parentheses when available. Unless indicated otherwise, specimens were collected by me and are retained in my personal collection.

### *Carteretta clavata* Good 1942

Washington Co.: west slope Beaver Dam Mts., vic. Welcome Spring, 1220 m, 20 March 1988, 1 ♀ ex *Chaetodipus formosus*. "Beaver Dam," 23 February 1952, 1 ♀ (BYU #3462) ex *Perognathus [=Chaetodipus] formosus*, coll. C. L. Hayward. Beaver Dam Wash, 17 April 1952, 1 ♂ (BYU #3607) ex *Peromyscus truei*, coll. Grace Grant et al.

Few collections of this species are known from Utah (Tooele County: Stark 1959 [1 ♂], Egoscue 1976 [1 specimen, sex unknown]; Washington County: Jellison and Senger 1976 [2 ♂ ♂, 2 ♀ ♀]). It has also been collected in Clark County, NV (the type locality, Good 1942), and Mohave County, AZ (Augustson and Durham 1961). It is likely a nest flea of *C. formosus*.

### *Nearctopsylla brooksi* (Rothschild 1904)

Utah Co.: Provo, 21 August 1951; 1 ♂, 1 ♀ (BYU #1366 & 1365) ex *Mustela frenata*, coll. D. Brown. Provo Canyon, 16 June 1959; 2 ♂ ♂, 7 ♀ ♀ ex *Spilogale gracilis*, coll. D E. Beck.

This species was previously known in Utah from a single collection in Sevier County (Stark 1959). It is usually found on weasels (*Mustela* spp.).

### *Nearctopsylla hyrtaci* (Rothschild 1904)

Salt Lake Co.: Wasatch Mts., Big Cottonwood Canyon, vic. Redman campground, 2560 m (spruce-fir), 21 October 1990, 1 ♀ ex *Sorex monticolus* (UU #29163). Same locality, 28 October 1990, 1 ♀ ex *Sorex monticolus* (UU #29164).

Stark (1959) reported this species from Cache County. My collections extend the known range of this species further south in Utah along the Wasatch Cordillera. It is found on shrews (*Sorex* spp.) and *Mustela* spp.

### *Delotelis telegoni* (Rothschild 1905)

Salt Lake Co.: Wasatch Mts., Big Cottonwood Canyon, vic. Redman campground, 2560 m (spruce-fir), 21 October 1990, 1 ♂ ex *Clethrionomys gapperi*. Same date & locality, 1 ♀ ex *Tamiasciurus hudsonicus* nest. [The nest, about 3 m above ground level, also contained many red squirrel fleas (*Orchopeas c. caedens*). The squirrel probably carried this vole flea to its nest.] Same locality, 15 September 1991, 1 ♀ ex *Peromyscus maniculatus*. Same locality, 5 October 1991, 1 ♂ ex *Clethrionomys gapperi*.

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*Delotelis telegoni* has rarely been found in Utah; single specimens have been collected in Sanpete County (Stark 1959) and in Utah County (Egoscue 1988). It is significant that these collections were made in summer months (August 1951 and July 1985, respectively). Many more collections will likely be made if this species is searched for during the cooler months of the year. Also, it presumably would be profitable to search nests of *Microtus* and *Clethrionomys* for this species.

*Meringis shannoni* (Jordan 1929)

Eads et al. (1987) listed two collections of this species from Utah. The specimens are present in the BYU collection. However, the records are erroneous because the collection locality (Douglas County) does not exist in Utah. All other cited records of this species are from the states of Washington and Oregon, except a lone locality record in Humboldt County, NV (Lewis et al. 1988).

*Stenistomera hubbardi*  
Egoscue 1968

This rare species was listed by Tipton and Saunders (1971) as occurring in Utah although no specific records were cited. Egoscue (personal communication) knows of no records from Utah, and no specimens were present in the MLB Life Science Museum, the main repository of Tipton's Utah collections. In addition to the type specimens from Oregon (Egoscue 1968), the only other published record of *S. hubbardi* is that of Lewis et al. (1988), also from Oregon. It is unlikely that the species has been collected in Utah.

*Megarhthroglossus becki*  
Tipton & Allred 1951

Salt Lake Co.: Wasatch Mts., mouth of Little Cottonwood Canyon, 1676 m (scrub oak), 3 December 1989; 1♂, 1♀ ex *Neotoma cinerea* nest.

The species has been collected only in Utah (Kane, Piute, Utah, and Wayne counties; Tipton et al. 1979) and Arizona (Augustson and Durham 1961). This is the northernmost record known, some 37 km north of the type locality in the Wasatch Mountains. *Megarhthroglossus becki* is a nest flea of woodrats, principally the bushy-tailed woodrat *Neotoma cinerea*.

*Megabothris asio megacolpus*  
(Jordan 1929)

Rich Co.: Laketown, 22 August 1952; 11♂♂, 26♀♀ (BYU #5097-5099, 5101-5103, 5105-5119, 5121-5131, 5135, 5137, 5138, 5737, 5738) ex *Microtus montanus* nests [3 examined], coll. D E. Beck & L. Beck. Laketown, 26 June 1953; 1♂, 4♀♀ (BYU #7823-7827) ex *Microtus* nests [3 examined], coll. Beck et al. Sevier Co.: Fish Lake [south end], 5 August 1952, 1♀ (BYU #5622) ex *Microtus* sp., coll. Coffey & Killpack. Monroe Mt., 7 mi. [≈ 11 km] W of Koosharem, 30 July 1958; 1♂, 2♀♀ ex *Microtus* sp. [3 examined], coll. unknown.

The range of this boreal vole flea extends deep into south central Utah. Only two specimens are known from Idaho, including one from Bear Lake County adjacent to Rich County (Baird and Saunders 1992). Collections from Ravalli and Beaverhead counties, MT, are documented (Holland 1950), and specimens from Ravalli County are present in the Natural History Museum, London (T. M. Howard personal communication). A point-mapped record roughly on the Utah-Wyoming border given in Haddow et al. (1983) is evidently meant to be Laketown because four specimens with the same collection data as the 22 August 1952 series are present in the Natural History Museum, London (Howard personal communication).

*Chaetopsylla stewarti* Johnson 1955

Utah Co.: Wasatch Mts., "near summit of Alpine Loop" [American Fork or Provo Canyons], 24 November 1965; 6♂♂, 6♀♀ ex *Mustela frenata*, coll. D. Andrews. Summit Co.: Uinta Mts., 1/2 mi. [0.8 km] E Bald Mt., 8 August 1957, 1♂ ex *Martes* sp., coll. D. Allred & M. Killpack.

These specimens are the only ones known, other than the type series (from Cache County, Lewis and Lewis 1994). Weasels seem to be the preferred host.

*Euhoplopsyllus glacialis lynx*  
(Baker 1904)

Salt Lake Co.: Wasatch Mts., Big Cottonwood Canyon, vic. Redman Campground, 2560 m, 17 August 1988; 3♀♀, 1♂ ex *Lepus americanus* (UU #28674). Big Cottonwood Canyon, 2280 m, 30 August 1988, 1♀ ex *Lepus americanus*. Big Cottonwood Canyon, vic. Butler

Fork trailhead, 2182 m, 19 May 1991, 2♂♂ ex *Lepus americanus*.

Previously unknown in Utah, the nearest published records are for Ravalli County, MT (Kohls 1940), more than 570 km to the north. The type locality is Moscow, ID, about 790 km to the northwest (Baker 1904). This flea is consistently found on the snowshoe hare (*Lepus americanus*) and its predator, the lynx (*Lynx canadensis*). The form *E. glacialis affinis* is common in Utah and surrounding states on rabbits and jackrabbits (*Sylvilagus* spp. and *Lepus* spp. other than *L. americanus*). Questionable records of *E. g. lynx* from the states of Tamaulipas and Veracruz, Mexico (ex *Sylvilagus floridanus* and unidentified *Sylvilagus* sp.), are listed by Ayala et al. (1988).

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#### LITERATURE CITED

- AUGUSTSON, G. E., AND F. E. DURHAM. 1961. Records of fleas (Siphonaptera) from northwestern Arizona. Southern California Academy of Sciences Bulletin 60: 100-105.
- AYALA, R., J. C. MORALES, N. WILSON, J. E. LORENTE, AND H. E. PONCE. 1988. Catálogo de las pulgas (Insecta: Siphonaptera) en el Museo de Zoología, Facultad de Ciencias Universidad Nacional Autónoma de México 1: Colección Alfredo Barrera. Serie Catálogos del Museo de Zoología "Alfonso L. Herrera" Catálogo No. 1. 102 pp.
- BAIRD, C. R., AND R. C. SAUNDERS. 1992. An annotated checklist of the fleas of Idaho (Siphonaptera). Idaho Agricultural Experiment Station, Bulletin 145.
- BAKER, C. F. 1904. A revision of the American Siphonaptera, or fleas, together with a complete list and bibliography of the group. Proceedings of the U.S. National Museum 27: 365-469.
- EADS, R. B., E. G. CAMPOS, AND G. O. MAUPIN. 1987. A review of the genus *Meringis* (Siphonaptera: Hystrichopsyllidae). Journal of Medical Entomology 24: 467-476.
- EGOSECUE, H. J. 1966. New and additional host-flea associations and distributional records of fleas from Utah. Great Basin Naturalist 26: 71-75.
- \_\_\_\_\_. 1968. A new species of the genus *Stenistomera* (Siphonaptera: Hystrichopsyllidae). Southern California Academy of Sciences Bulletin 67: 138-142.
- \_\_\_\_\_. 1976. Flea exchange between deer mice and some associated small mammals in western Utah. Great Basin Naturalist 36: 475-480.
- \_\_\_\_\_. 1977. The sagebrush vole flea, *Megabothris clantoni princei*, in western Utah, with comments on the distribution of *Megabothris* in the Bonneville Basin. Great Basin Naturalist 37: 75-76.
- \_\_\_\_\_. 1988. Noteworthy flea records from Utah, Nevada, and Oregon. Great Basin Naturalist 48: 530-532.
- \_\_\_\_\_. 1989. A new species of the genus *Traubella* (Siphonaptera: Ceratophyllidae). Southern California Academy of Sciences Bulletin 88: 131-134.
- GOOD, N. E. 1942. *Carteretta carteri clavata*, a new subspecies from Nevada, and notes on synonymy (Siphonaptera). Annals of the Entomological Society of America 35: 110-113.
- HADDOW, J., R. TRAUB, AND M. ROTHSCHILD. 1983. Distribution of ceratophyllid fleas and notes on their hosts. Pages 42-163 in R. Traub, M. Rothschild, and J. F. Haddow, The Rothschild collection of fleas—the Ceratophyllidae: keys to the genera and host relationships with notes on their evolution, zoogeography and medical importance. 288 pp. [Privately published.]
- HOLLAND, C. P. 1950. Notes on *Megabothris asio* (Baker) and *M. calcarifer* (Wagner) with the description of a new subspecies (Siphonaptera: Ceratophyllidae). Canadian Entomologist 82: 126-133.
- JELLISON, W. L., AND C. M. SENGER. 1976. Fleas of western North America except Montana in the Rocky Mountain Laboratory collection. Pages 55-136 in H. C. Taylor, Jr., and J. Clark, eds., Papers in honor of Jerry Fla. Western Washington State College, Bellingham.
- KUCERA, J. R., AND G. E. HAAS. 1992. Siphonaptera (fleas) collected from small mammals in montane southern Utah. Great Basin Naturalist 52: 382-384.
- KOHL, G. M. 1940. Siphonaptera—a study of the species infesting wild hares and rabbits of North America north of Mexico. National Institute of Health Bulletin 175.
- LEWIS, R. E., AND J. H. LEWIS. 1994. Siphonaptera of North America north of Mexico: Vermipsyllidae and Rhopalopsyllidae. Journal of Medical Entomology 31: 82-98.
- LEWIS, R. E., J. H. LEWIS, AND C. MASER. 1988. The fleas of the Pacific Northwest. Oregon State University Press, Corvallis. 296 pp.
- STARK, H. E. 1959. The Siphonaptera of Utah. U.S. Department of Health, Education and Welfare, Communicable Disease Center, Atlanta, GA. 239 pp.
- TIPTON, V. J., AND R. C. SAUNDERS. 1971. A list of arthropods of medical importance which occur in Utah with a review of arthropod-borne diseases endemic in the state. Brigham Young University Science Bulletin, Biological Series 15: 1-31.
- TIPTON, V. J., H. E. STARK, AND J. A. WILDIE. 1979. Anomiopsyllinae (Siphonaptera: Hystrichopsyllidae), II. The genera *Callistopsyllus*, *Conorhinopsylla*, *Megarthroglossus*, and *Stenistomera*. Great Basin Naturalist 39: 351-418.